

SECTION 15845 - AIR TERMINALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Single-duct air terminals.
- B. Related Sections include the following:
 - 1. Division 15 Section "Duct Insulation" for external insulation of air terminals.
 - 2. Division 15 Section "Control Systems and Equipment" for control devices installed on air terminals.

1.3 SUBMITTALS

- A. Product Data: Include rated capacities; shipping, installed, and operating weights; furnished specialties; and accessories for each model indicated. Include a schedule showing drawing designation, room location, number furnished, model number, size, and accessories furnished.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connection.



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1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer-installed and field-installed wiring.
 - C. Maintenance Data: List of parts for each type of air terminal and troubleshooting maintenance guide to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Product Options: Drawings and schedules indicate requirements of air terminals and are based on specific systems indicated. Other manufacturers' systems with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."
- B. Listing and Labeling: Provide electrically operated air terminals specified in this Section that are listed and labeled.
- C. NFPA Compliance: Install air terminals according to NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems."
- D. Comply with NFPA 70 for electrical components and installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering air terminals that may be incorporated into the Work include, but are not limited to, the following:
 1. Air System Components; Krueger Div.
 2. Anemostat Products Div.
 3. Carrier Corp.
 4. Nailor Industries Inc.

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5. Titus.
 6. Trane Co. (The).
 7. Tuttle & Bailey, Hart & Cooley, Inc.
 8. York International Corp. (Tempmaster)

2.2 SINGLE-DUCT AIR TERMINALS

- A. Configuration: Volume-damper assembly inside unit casing. Locate control components inside protective metal shroud.
- B. Casings: Steel or aluminum sheet metal of the following minimum thicknesses:
 1. Upstream Pressure Side: 0.0239-inch (0.6-mm) steel.
 2. Downstream Pressure Side: 0.0179-inch (0.45-mm) steel.
- C. Casing Lining: Minimum of 1/2-inch- (13-mm-) thick, neoprene- or vinyl-coated, fibrous-glass insulation; 1.5-lb/cu. ft. (24-kg/cu. m) density, complying with NFPA 90A requirements and UL 181 erosion requirements. Secure lining to prevent delamination, sagging, or settling.
 1. Coat liner surfaces and edges with erosion-resistant coating or cover with perforated metal.
- D. Plenum Air Inlets: Round stub connections or S-slip and drive connections for duct attachment.
- E. Plenum Air Outlets: S-slip and drive connections.
- F. Access: Removable panels to permit access to dampers and other parts requiring service, adjustment, or maintenance; with airtight gasket and quarter-turn latches.
- G. Volume Damper: Construct of galvanized steel with peripheral gasket and self-lubricating bearings.

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1. Maximum Damper Leakage: 2 percent of nominal airflow at 1-inch wg (250-Pa) inlet static pressure.
 - H. Attenuator Section: Line with 2-inch- (50-mm-) thick, neoprene- or vinyl-coated, fibrous-glass insulation.
 - I. Round Outlet: Discharge collar matching inlet size.
 - J. Hot-Water Heating Coil: Copper tube, mechanically expanded into aluminum-plate fins; leak tested underwater to 200 psig (1380 kPa); and factory installed.
 - K. Electronic Controls: Bidirectional damper operator and microprocessor-based controller with integral airflow transducer and room sensor provide control with the following features:
 1. Proportional plus integral control of room temperature.
 2. Time-proportional reheat-coil control.
 3. Occupied/unoccupied operating mode.
 4. Remote reset of airflow or temperature set points.
 5. Adjusting and monitoring with portable terminal.
 6. Communication with temperature-control system specified in other Division 15 Sections.

2.3 SOURCE QUALITY CONTROL

- A. Testing Requirements: Test and rate air terminals according to ARI 880, "Industry Standard for Air Terminals."
- B. Identification: Label each air terminal with plan number, nominal airflow, maximum and minimum factory-set airflows, coil type, and ARI certification seal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install air terminals level and plumb, according to manufacturer's written instructions, rough-in drawings, original design, and referenced standards; and maintain sufficient clearance for normal service and maintenance.
- B. Connect ductwork to air terminals according to Division 15 ductwork Sections.

3.2 CONNECTIONS

- A. Install piping adjacent to air terminals to allow service and maintenance.
- B. Electrical: Comply with applicable requirements in Division 16 Sections.
- C. Ground equipment.
 - 1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

- A. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.4 CLEANING

- A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris, and repair damaged finishes.

3.5 COMMISSIONING



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- A. Verify that installation of each air terminal is according to the Contract Documents.
 - B. Check that inlet duct connections are as recommended by air terminal manufacturer to achieve proper performance.
 - C. Check that controls and control enclosure are accessible.
 - D. Verify that control connections are complete.
 - E. Check that nameplate and identification tag are visible.
 - F. Verify that controls respond to inputs as specified.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel as specified below:
 - 1. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance.
 - 2. Review data in the maintenance manuals. Refer to Division 1.
 - 3. Schedule training with Owner, through Architect, with at least 7 days' advance notice.

END OF SECTION 15845